

WE CLAIM:

1. A method of managing flow of datagram traffic, the method comprising the steps of:
 - providing a first networked device that is operably connected to a second networked device;
 - transferring datagrams from a first port of the first device to a first port of the second device using a pathway that is operably connected to a second port of the first device and a second port of the second device; and
 - selectively pausing an individual port on the first device that is causing over-subscription of the first port of the second device.
2. The method of claim 1, further comprising the step of re-activating a paused port by transmitting a re-activation signal to the paused port.
3. The method of claim 1, further comprising the step of re-activating a paused port pursuant to the detection of a condition wherein the first port of the second device has datagram traffic flowing therethrough in an amount that is below a lower trigger value.
4. The method of claim 1, further comprising the step of re-activating a paused port pursuant to the passage of a pre-determined time increment.
5. The method of claim 1, wherein the selectively pausing step comprises using in-band control frames to pause the individual port.
6. The method of claim 1, wherein the selectively pausing step comprises using separate pathways between the first and second networked devices to transmit datagrams and control frames.

7. The method of claim 1, wherein the selectively pausing step comprises using a non-memory-consuming communication to pause the individual port.
8. The method of claim 1, wherein the selectively pausing step comprises referencing a listing of ports that are over-subscribed.
9. The method of claim 8, wherein the selectively pausing step comprises periodically updating the listing of ports that are over-subscribed.
10. The method of claim 1, wherein the selectively pausing step comprises selectively pausing individual ports on devices other than the first and second device.
11. A method of managing flow of datagram traffic, the method comprising the steps of:
 - providing a first networked device that is operably connected to a second networked device;
 - transferring datagrams from a first port of the first device to a first port of the second device using a pathway that is operably connected to a second port of the first device and a second port of the second device; and
 - signaling the first port of the first device to send fewer datagrams to the first port of the second device when an over-subscription is detected at the first port of the second device.
12. The method of claim 11, wherein the signaling step comprises signaling the first port of the first device to send datagrams in

proportion to a total number of datagrams attempting to reach the first port of the second device.

13. The method of claim 11, wherein the signaling step is performed using a non-memory-consuming communication to signal the first port of the first device.
14. The method of claim 11, wherein the signaling step comprises broadcasting a signal that alerts ports on the network that the first port of the second device is over-subscribed.
15. The method of claim 11, wherein the transferring step comprises referencing a listing of ports on the network that are over-subscribed before transferring a datagram between the first port of the first device to the first port of the second device.
16. The method of claim 11, further comprising resuming unrestricted datagram transmission to the first port of the second device by broadcasting a signal.
17. The method of claim 11, further comprising resuming unrestricted datagram transmission to the first port of the second device when a total number of datagrams attempting to reach the first port of the second device falls below a lower trigger value.
18. The method of claim 11, further comprising resuming unrestricted datagram transmission to the first port of the second device after passage of a pre-determined time increment.

19. The method of claim 11, wherein the signaling step comprises using in-band control frames.
20. The method of claim 11, wherein the signaling step comprises using a separate link to transmit control frames.
21. A communications system comprising:
 - a first data distribution means operably connected to a second data distribution means;
 - a first communications means for transferring datagrams from a first port of the first data distribution means to a first port of the second data distribution means; and
 - control means for selectively pausing individual ports that are causing over-subscription of the first port of the second data distribution means.
22. The system of claim 21, further comprising a second communications means between the first data distribution means and the second data distribution means wherein the second communications means is non-lossy.
23. The system of claim 21, further comprising storage means for storing information concerning which ports in the network are over-subscribed.
24. A communications system comprising:
 - a first data distribution means operably connected to a second data distribution means for distributing datagrams over a network;

communications means for transferring the datagrams from a first port of the first data distribution means to a first port of the second data distribution means; and

control means for signaling the first port of the first data distribution means to send fewer datagrams to the first port of the second data distribution means when an over-subscription is detected at the first port of the second data distribution means.

25. The system of claim 24, further comprising a second communications means for allowing communication between the first data distribution means and the second data distribution means, wherein the second communications means is non-lossy.
26. The system of claim 24, further comprising storage means for storing information concerning which ports in the network are over-subscribed.
27. A communications system comprising:
 - a first device operably connected to a second device;
 - a first controller capable of transferring datagrams from a first port of the first device to a first port of the second device; and
 - a second controller capable of selectively pausing individual ports in the first device that are contributing to over-subscription of the first port of the second device.
28. The system of claim 27, further comprising a storage unit for storing information concerning which ports in the second device are over-subscribed.
29. A communications system comprising:

a first device operably connected to a second device;

a first controller capable of transferring datagrams from a first port of the first device to a first port of the second device; and

a second controller capable of signaling the first port of the first device to send fewer datagrams to the second port of the second device when an over-subscription is detected at the second port of the second device.

30. The system of claim 29, further comprising a storage unit for storing information concerning which ports in the network are over-subscribed.